



Lignite Fuel Enhancement

Quarterly Technical Progress Report:

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Lignite Fuel Enhancement

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Abstract

This 12th quarterly Technical Progress Report for the Lignite Fuel Enhancement Project summarizes activities from April 1st through June 30th of 2007. It summarizes the completion of the Prototype testing activity and initial full-scale dryer design, Budget Period 2 activity during that time period.

Acknowledgement

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Executive Report

Progress:

The Design Team finalized the heat exchanger sizing and location this quarter. Heyl-Patterson is having the first two dryers, Dryer 21 and 22, fabricated in Utah at Structural Steel & Plate Fabrication Co; delivery is expected in August. Several meetings were held with Barr engineers to complete finalize arrangement of the drying, air jig, and coal handling systems and interaction with existing equipment. Honeywell is working on the control system logic. By the end of March we had processed nearly 300,000 tons of lignite through the dryer. Following start-up of Unit#2 and subsequent scheduled maintenance of the dryer, it was returned to service in June.

The revised Budget Period 1 (Phase 1) final report was submitted this quarter. Comments from NETL were incorporated following a review by GRE legal

To further summarize, the focus this quarter has been procurement and fabrication of major pieces of equipment for dryers 21 & 22 located in Unit#2.

Great River Energy and Headwaters continue to meet to discuss the Commercialization Plans. Great River Energy also met with Moss & Barnett lawyers to discuss a preliminary licensing agreement. Contacts have been made from TXU, Oglethorpe, ENEL, and Aker Kvaerner who is engineer for Headwaters coal to liquids.

Invoices #29 thru #34 were submitted this quarter. Contracts from the three primary contractors Barr, EPRI, and Lehigh University have been submitted to NETL. The Budget expended through June 30th was \$2,678,736 (budget \$10,170,898). DOE contribution paid was \$1,037,205. Invoicing for Budget Period 2 will overlap into Budget Period 3, if continuation is recommended, due to late steel delivery/installation and invoicing for other equipment ordered in BP2 and delivered in BP3.

Charles Bullinger gave a presentation to Vattenfal in Frankfurt in June and tour of the Coal Creek drying facility to engineers from Platt River Power.

Per the Cooperative Agreement, GRE obtained DOE's review of the commercial-scale (full-scale) dryer system. GRE presented the design details, drawings, and test plans, to DOE at a meeting at NETL-Morgantown on April 17, 2007. This meeting would satisfy the deliverable requirements of the Design Tasks 1.2 and 2.2 of the Statement of Project Objectives in the Cooperative Agreement.

Problems Encountered:

Outage maintenance restricted dryer operation in April and May. Air lock coupling alignment has been an issue because of restricted accessibility. Steel deliveries are delayed from May to August. Dryers will be delivered in August.

Plans for the next reporting period:

Expect some material (heavy steel) and major components to begin arriving in August. Structural footings will be completed and steel erection will commence. Fabrication of Dryers 21 and 22 will complete and Dryer 21 should arrive on site next quarter.

Prospects for future progress:

The prospects are quite good that all the next Quarter deliverables will be met.

Experimental Apparatus:

Details of the dryer and system, P&ID's, schematics, and drawings contain "Limited Rights" information which cannot be disclosed at this particular time.

Experimental & Operating Data:

No "new" data to report. Data is being collected by the digital control system however no analysis has been done on it. The testing this quarter has been focused on "life" issues. Inspections will be conducted during the Outage to monitor these affects but have not yet been completed.

Data Reduction:

Nothing new to report this quarter.

Hypothesis & Conclusions:

Hypothesis remains the same. We will be able to dry lignite an increment to benefit the performance of and reduce emissions from a coal burning electric power generating station.

